

WHAT IS CLAIMED IS:

1. A liquid crystal display (LCD) panel comprising:
  - a substrate having a cell region and a pad region;
  - a plurality of gate and data lines formed in the cell region, wherein the plurality of data lines includes a first set of data lines and a second set of data lines, wherein the plurality of gate lines is arranged to cross the plurality of data lines to form a plurality of pixel regions within the cell region;
  - a first set of data pads formed in the pad region, wherein each data pad in the first set of data pads extends from a corresponding one of the first set of data lines; and
  - a second set of data pads formed in the pad region, wherein the first and the second sets of data pads are arranged in a single-bank structure in the pad region, wherein each data pad in the second set of data pads is electrically connected to a corresponding one of the second set of data lines and is arranged in a direction parallel to that of the first set of data pads, and wherein each the data pad in the second set of data pads is placed in the pad region at a location whose longitudinal axis is collinear with that of an adjacent one of the first set of data lines.
2. The LCD panel of claim 1, wherein the first set of data lines includes all odd-numbered data lines in the plurality of data lines, and wherein the second set of data lines includes all even-numbered data lines in the plurality of data lines.

3. The LCD panel of claim 1, wherein each the data pad in the second set of data pads includes:

a conductive pattern having a first end in the cell region  
and a second end in the pad region, wherein the  
longitudinal axis of the second end is collinear with  
that of the adjacent one of the first set of data  
lines, wherein the conductive pattern is formed on the  
substrate at a level below that of an adjacent one of  
the first set of data pads and wherein the first end  
is connected to the corresponding one of the second  
set of data lines; and

a first conductive film connected to the second end of the conductive pattern.

4. The LCD panel of claim 3, wherein the conductive pattern is formed in one of the following parts on the substrate:

a first part where at least a portion of the conductive pattern falls perpendicularly below  
the adjacent one of the first set of data pads; and

a second part where no portion of the conductive pattern falls perpendicularly below the  
adjacent one of the first set of data pads.

5. The LCD panel of claim 4, wherein the conductive pattern in the second part is formed  
on one or more sides of the adjacent one of the first set of data pads.

6. The LCD panel of claim 3, wherein the conductive pattern includes a refracted portion linking the first and the second ends thereof.
7. The LCD panel of claim 3, wherein the conductive pattern is of the same material as that of the plurality of gate lines.
8. The LCD panel of claim 3, further comprising an insulating layer interposed between the conductive pattern and the adjacent one of the first set of data pads located above the conductive pattern.
9. The LCD panel of claim 3, further comprising a second conductive film connecting the first end of the conductive pattern to the corresponding one of the second set of data lines.
10. The LCD panel of claim 3, wherein the conductive pattern has the same width as that of the corresponding one of the second set of data lines.
11. The LCD panel of claim 1, wherein a spacing between two consecutive data pads in the first set of data pads is at least two times that between two consecutive data lines in the plurality of data lines.
12. The LCD panel of claim 1, further comprising a plurality of thin film transistors, wherein each thin film transistor is formed at a crossing point between a corresponding gate line from the plurality of gate lines and a corresponding data line from the plurality of data lines.

13. The LCD panel of claim 1, further comprising a plurality of pixel electrodes, wherein each pixel electrode is formed in a corresponding pixel region from the plurality of pixel regions.
14. The LCD panel of claim 1, wherein each data line in the second set of data lines comprises the following:
  - an extension portion formed a predetermined distance into the pad region; and
  - a refracted portion formed in the pad region, wherein the refracted portion commencing at an end of the extension portion in the pad region and terminating as a corresponding data pad in the second set of data pads.
15. The LCD panel of claim 14, wherein the end of the extension portion in the pad region is coextensive with an adjacent data pad from the first set of data pads.
16. A method of manufacturing an LCD panel comprising:
  - forming a plurality of gate lines in a cell region of a substrate and forming a plurality of conductive patterns on the substrate, wherein each conductive pattern having a first end in the cell region and a second end in a pad region;
  - forming a gate insulating film on the substrate covering the plurality of gate lines and the plurality of conductive patterns;
  - forming a plurality of data lines in the cell region on the gate insulating film, wherein the plurality of data lines includes odd-numbered data lines and even-numbered data lines, wherein the longitudinal axis of each of the odd-numbered data lines is

collinear with the second end of an adjacent one of the plurality of conductive patterns on the substrate;

forming a first set of data pads in the pad region, wherein each data pad in the first set of data pads extends from a corresponding one of the odd-numbered data lines on the gate insulating film above the plurality of conductive patterns; and

forming a second set of data pads in the pad region in a single-bank structure with the first set of data pads, wherein each data pad in the second set of data pads is connected at least to the second end of a corresponding one of the plurality of conductive patterns and is arranged in a direction parallel to that of the first set of data pads.

17. The method of claim 16, further comprising forming and patterning a passivation film on an entire surface of the substrate after forming the plurality of data lines.
18. The method of claim 17, wherein forming the first and the second sets of data pads further includes performing the following after forming and patterning the passivation film:

forming a plurality of first contact holes, wherein each first contact hole exposes an end part of a corresponding odd-numbered data line;

forming a plurality of second contact holes, wherein each second contact hole exposes an end part of a corresponding even-numbered data line and the first end of a conductive pattern adjacent thereto;

forming a plurality of third contact holes, wherein each third contact hole exposes the second end of the conductive pattern adjacent thereto;  
forming a first transparent conductive film connected to each odd-numbered data line through a corresponding first contact hole;  
forming a second transparent conductive film connected to each even-numbered data line and to each the first end of the adjacent conductive pattern through a corresponding second contact hole; and  
forming a third transparent conductive film connected to each the second end of the adjacent conductive pattern through a corresponding third contact hole.

19. The method of claim 18, further comprising forming a plurality of source electrodes and a plurality of drain electrodes in the cell region for a corresponding plurality of thin film transistors, wherein the plurality of source and drain electrodes are formed simultaneously with the plurality of data lines.
20. The method of claim 19, further comprising forming a plurality of pixel electrodes after forming the passivation film, wherein each of the plurality of pixel electrodes is connected to a corresponding one of the plurality of drain electrodes.
21. The method of claim 20, wherein the first, second, and third transparent conductive films are formed at the same time when the plurality of pixel electrodes is formed.
22. A method for manufacturing an LCD panel comprising:  
forming a plurality of gate lines in a cell region of a

substrate;

forming a plurality of data lines crossing the plurality of gate lines in the cell region of the substrate, wherein the plurality of data lines is divided into a first set of data lines and a second set of data lines, wherein each data line in the first set of data lines has a first length extended into a pad region of the substrate, wherein each data line in the second set of data lines has a second length extended into the pad region of the substrate, and wherein the first length is longer than the second length;

forming a plurality of data pads on the substrate, wherein each of the plurality of data pads is connected to a respective one of the plurality of data lines and configured to apply an electrical signal thereto;

forming a passivation film on the plurality of data lines and on the plurality of data pads; and

forming a transparent conductive film connected to each of the plurality of data pads.

23. The method of claim 22, wherein a portion of each the first length is refracted towards a corresponding data pad connected to an adjacent one of the second set of data lines.
24. The method of claim 22, further comprising:
  - forming a plurality of gate electrodes in the cell region simultaneously with the plurality of gate lines; and
  - forming a plurality of source electrodes and a plurality of drain electrodes in the cell region simultaneously with the plurality of data lines.

25. An LCD panel comprising:

an insulating substrate defined as a cell region and a pad region;

a plurality of gate lines formed in the cell region;

a plurality of data lines crossing the gate lines and having alternately different extended lengths to the pad region; and

data pads applying an electric signal to the data lines.